

Notes on Migrant Birds of North Bihar

BY

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(With two text-figures)

In January 1964 I was deputed to north Bihar to study the local conditions and to assess the possibilities of ringing migratory birds particularly waders (Charadriiformes) and duck. The area surveyed extends from the north bank of the Ganges to the India-Nepal border in the central portion of north Bihar.

North Bihar is an absolutely flat alluvial plain, through which the many rivers that debouch from the Himalayas follow their rather slow and winding courses to the south. They have in general comparatively narrow channels which they frequently overflow, inundating considerable areas. Among these Kosi River requires particular attention, as it is responsible for the creation of favourable ecological conditions in central Bihar for the migrant species entering India from the north. The Kosi, Bihar's river of sorrow, is notorious for the desolation caused by its floods. The channels are constantly changing as old ones are choked by sandbanks (within the last seventy years the river has changed its course westwards for more than fifty miles) resulting in the production of innumerable *chours*¹ and *jheels*² which provide good feeding ground for waterfowl and wader migrants. To tame the Kosi and direct its course through a specified area embankments are being built on either bank at various places. The distance between the embankments varies from 4 to 10 miles or more and when the flood starts (from July onwards) the intervening area provides an excellent resort for the migrants. Deep water paddy (coarse paddy grown in low-lying inundated areas) is an added attraction to the migrants.

Vegetation

Trees occur around villages which are separated by extensive fields. Mango, pipal, and banyan are common, also neem and

¹ *chaur* = low, water-logged meadow

² *jheel* = a marsh

tamarind. Palms, both palmyra and date, are found near fields. Bamboo brakes and silk cotton trees are infrequently met with.

Crops

Rice, wheat, and maize are the principal crops. Several varieties of gram, chilli, groundnut, tobacco, and sugarcane are also grown. Enlargement of cultivated areas is going to be one of the principal causes affecting the population of migrant birds in future.

In the intricate network of channels that traverse the plains grow *Vallisneria* sp.; *Pistia* sp., *Eichhornia* sp., and *Nymphaea* sp. were mainly seen in *chaurs*, *jheels*, and water-logged areas.

Climate

During the hot weather, from March to the middle of June, westerly winds blow over the arid sun-baked plains causing high temperatures and low humidity. The monsoon usually breaks in the third week of June and continues till September or early October. The cold season begins in November and nights are very cold in December and January. There are occasional showers during this period. The spring season is very brief, beginning in February and lasting till March. The average rainfall is c. 100 cm.

Itinerary

Monghyr District :

Manjhaul and Kabar Tal¹ (c. 10 and 31 Jan. to 24 Feb. and 15 to 23
14 miles respectively north of Mar. 1964
Begusarai railway station)

Darbhanga District :

Laheriaserai (3 miles south of Dar- 24 to 26 Feb. 1964
bhanga)
Jamalpur village (c. 25 miles south 27-28 Feb., and 2 Mar. 1964
of Ghogardiha railway station)
Supaul *jheel* (near Supaul village and 3 Mar. 1964
4 miles west of Jamalpur village)

Saharsa District :

Koniya *jheel* (c. 4 miles east of 29 Feb. and 1 Mar. 1964
Kusheshwara-Astan)
Nirmali railway station 4 to 7 Mar. 1964
Birpur (Headquarters of Kosi River 8, 11, 12, and 13 Mar. 1964
Project)

¹ tal = a shallow lake

Bhimnagar (4 miles west of Birpur) 9 Mar. 1964
 Pratapganj (c. 18 miles south of Birpur) 10 Mar. 1964

Among the places visited none equalled Kabar Tal for the number and variety of waterfowl. Situated in the Begusarai subdivision of Monghyr District, Kabar Tal is accessible by road via Manjhaul. The lake is shallow for the most part and has an area of about eight square miles. During the rains the surrounding low-lying areas are inundated increasing the size of the lake. To the east of the lake are large areas studded with marshy hollows.

The lake is eutrophic sustaining a rich plant and animal life. The water is crystal clear and the soil, locally known as *kachhua keual*, is dark in colour. Emergent vegetation is rather patchy and sparsely distributed, except in the deeper areas of about 3 to 4 square miles where subaquatic vegetation is prolific. Water Hyacinth (*Eichhornia* sp.) near the water's edge was drying up at the time of my visit. There are no trees in the lake area.

Cormorants and darters were absent at the time of my visit (31 January to 24 February and 15 to 19 March), perhaps their absence is related to that of trees.

The lake was teeming with waterfowl of every description from 31 January to 22 February but when I visited the area on 19 March it was completely deserted except for 50 or 60 *Anas querquedula*. The lake is well stocked with fishes, which are replenished yearly by river floods; the principal species are members of the carp family. A good number of fishes is caught for sale. The water from the lake is drained through the Chandan, a tributary of the River Balan.

The Kabar Tal is very famous for duck shoots and it is puzzling why there is no mention of it in ornithological literature. With little effort the lake can be converted into one of the best waterfowl sanctuaries in India. At present, I understand, plans are afoot to drain off the water completely. If this scheme materializes the lake area will be turned into an expanse of dry fields by the end of November, an irrevocable loss of one of the most delightful natural lakes of India.

Next to Kabar the Koniya *jheel* has the largest number of waterfowl. This is also an extensive perennial lake of eutrophic nature. Between eight and ten thousand ducks of various kinds were seen on 1 March. I was informed that the number of waterfowl coming to the *jheel* has decreased considerably in recent years owing to the unrestricted growth of jungle (emergent vegetation) which the birds

find unsuitable. Waterfowl in thickly packed flocks were seen on the open water with luxuriant growth of subaquatic plants.

The following birds were recorded :

ANATIDAE

Tadorna ferruginea (Pallas): Brahminy Duck. Very common till March 10 on Kosi River. Seen invariably in pairs on the Ganges and on the Kosi. They preferred clear stretches of sandbank. Groups of 20 to 30 birds were common. The largest flock, seen near Dhalva on the Kosi, contained five to six hundred birds. Not seen on lakes or other standing water.

Anas acuta Linnaeus: Pintail. Common. Not in any numbers. Generally distributed in suitable places in the company of other ducks.

Anas crecca Linnaeus: Common Teal, and **Anas querquedula** Linnaeus: Garganey. Plentiful. The commonest ducks. From January 31 to the end of February *A. crecca* was seen in large numbers while *A. querquedula* was rather uncommon. By the end of February when the days become hotter most of the *A. crecca* left the area and its place was taken over by *A. querquedula*. On 19 March Kabar Tal was found completely deserted by waterfowl except for 50 or 60 *A. querquedula*.

During the heat of the day both species were observed resting in compact flocks in shallow waters of the low-lying reedy areas as well as on the sandy islands of the Kosi. Such flocks contained 500 to 1500 birds.

A couple of hundred *A. crecca* handled between 2 February and 18 March showed no signs of moulting of the primaries and secondaries or of the tail-feathers. Invariably all ♂♂ were in their brilliant breeding plumage. On the contrary *A. querquedula* ♂♂ without exception were in eclipse plumage in February and started getting the breeding attire by March.

The recovery from Kashmir (15-3-1964) of one of the *A. crecca* ringed at Manjhaul (Monghyr District, 6-2-1964) suggests that this species may not go directly across the Himalayas on its way back to its breeding ground.

Anas strepera Linnaeus: Gadwall. Seen in small numbers all over.

?**Anas penelope** Linnaeus: Wigeon. Scarce, seen only at Kabar.

Anas clypeata Linnaeus: Shoveller. Common, in moderate numbers. Noted in every suitable locality, and all in breeding plumage. No moulting of the primaries and secondaries or of tail-feathers in individuals examined between 18 February and 16 March.

Netta rufina (Pallas): Redcrested Pochard. This beautiful duck was seen in thousands at Kabar, in good numbers at Koniya *jheel*, and a few were present in most of the low-lying water-logged areas visited. All were in breeding plumage. At Kabar and Koniya *jheel* they were noted frequenting open stretches of water with plenty of submerged aquatic weeds. Next to coots this was the predominant species at Kabar between 19 and 21 February and kept to the company of its own species.

Aythya ferina (Linnaeus): Common Pochard. Common. Seen in good numbers in company with other pochards. Showed a liking for open waters.

Aythya nyroca (Güldenstädt): White-eyed Pochard. Very common. Seen in good numbers all over. In the swamps and marshy pockets east of Kabar, this species outnumbered other waterfowl. Here the majority rested during the hotter part of the day but a few fed singly or in pairs near the water's edge.

?**Aythya baeri** (Radde): Baer's Pochard. A pochard with greenish black neck and head seen at the Manjhaul bird market was probably of this species.

Aythya fuligula (Linnaeus): Tufted Duck. Common but not in any numbers.

Non-migrant species of ducks

Dendrocygna javanica (Horsfield): Lesser Whistling Teal. A flock of about 100 whistling teal in the company of cotton teal and coots was seen feeding in open water at Koniya *jheel*. Fairly tame and allowed a close approach to about 70 ft., when they arose with shrill notes and continued calling till they settled at a distance after making one or two rounds at a height of about 60 ft. Not seen elsewhere.

Nettapus coromandelianus (Gmelin): Cotton Teal. I saw this bird (12-15) only at Koniya *jheel*, in company with whistling teal.

Rhodonessa caryophyllacea (Latham): Pinkheaded Duck. Every effort was made to obtain information on this duck. A careful search of all suitable localities produced no results. Old shikaris and professional bird-catchers to whom a colour illustration of the bird was shown said that they had neither shot nor seen one.

In Kabar Tal and Koniya *jheel* during the day ducks were seen in thickly packed flocks floating on clear open stretches of water with plenty of submerged aquatic weeds. When a mixed party of ducks, teals, coots, and little grebes was approached in a countrycraft, the first to take notice and leave the spot were the teals. The ducks slowly swam away and the last to leave were the grebes and coots. Even

though ducks were frequently disturbed at Kabar by the shikaris and the moving countrycrafts, only on rare occasions did I see them leave the lake. Usually they flew to another portion of the lake.

During the heat of the day thousands of ducks, mainly *Anas querquedula*, *A. crecca*, *Aythya fuligula*, and *A. nyroca*, and perhaps other species also, were seen (on 28 February and 2 March) resting in thickly packed flocks on the sandy islands in the Kosi which were quite far away from the banks.

RALLIDAE

Fulica atra Linnaeus: Coot. Very common in suitable localities. This was the predominant species at Kabar Tal where I saw them in thousands, from 31 January to 23 February. When the area was revisited on 19 March none was observed.

CHARADRIIDAE

Vanellus leucurus (Lichtenstein): Whitetailed Lapwing. Seen singly at Nirmali on 5 March in a reedy low-lying area busily engaged in feeding near the water's edge.

Vanellus cinereus (Blyth): Greyheaded Lapwing. One seen in Manjhaul bird market.

Pluvialis dominica (P.L.S.Müller): Eastern Golden Plover. Common. Seen in good numbers, five to six hundred, flying towards Kosi River near Jamalpur on 28 February at 9 a.m. Also observed resting in thickly packed flocks on the exposed sandy portions of the Kosi and in moist grassy edges of water-logged low-lying areas near Jamalpur. Before settling down the flocks were noted making much aerial evolution in perfect unison around the place. All the birds handled and observed till 2 March were in winter plumage; none of them showed any trace of nuptial plumage.

Charadrius dubius Scopoli: Little Ringed Plover. Common, seen near water's edge.

Charadrius alexandrinus Linnaeus: Kentish Plover. As above.

Charadrius mongolus Pallas: Lesser Sand Plover. Two were brought to me on 16 March and one the next day. They were in non-breeding plumage and did not show signs of moulting.

Numenius arquata (Linnaeus): Curlew. Frequently heard at night. Seen near the Kosi, Kabar, and Jamalpur in moderate numbers. I

did not see them resting during the hotter part of the day even though they were seen with other waders which were inactive.

?Numenius tenuirostris Vieillot: Slenderbilled Curlew. Near Jamalpur I saw a party of seven curlews standing close together. Three or four were noticeably smaller, half *N. arquata*. At about 70 ft. distance I scrutinised them very carefully through the binoculars but failed to see the stripes on the crown characteristic of *N. phaeopus*. Hence I suspect them to be *N. tenuirostris*.

Limosa limosa (Linnaeus): Blacktailed Godwit. Common near Jamalpur frequenting swamps. On 28 February in water-logged area with thinly distributed emergent vegetation a tightly packed group of 60 to 80 birds was seen between 10 a.m. and 3.30 p.m. The flock strength was reduced to half when I visited the place after two days. I believe that a few among them were Bartailed Godwit *Limosa lapponica* (Linnaeus).

Tringa totanus (Linnaeus): Common Redshank. One was brought to me on 16 March at Manjhaur by *Mirshikars*. They informed me that this bird is common during the monsoon.

Tringa ochropus Linnaeus: Green Sandpiper, and **Tringa glareola** Linnaeus: Spotted Sandpiper. *T. ochropus* was very common and outnumbered *T. glareola* at Birpur and Bhimnagar; vice versa at Manjhaur, Nirmali, and Koniya *jheel*. February (2 to 19) individuals of *T. glareola* were moulting the outer 5th, 4th, or 3rd primaries. Most of the March (16 and 17) individuals had moulted the primary feathers and a few were moulting the two outermost feathers. In both February and March individuals body feathers were in moult.

Tringa hypoleucos Linnaeus: Common Sandpiper. Met with at all places, but was not common as one would expect it to be.

Capella stenura (Bonaparte): Pintail Snipe. Individuals examined (8 February to 16 March) showed no moulting of the primaries. Body feathers were in moult. My note on an individual collected on 16 March reads: 'outermost broad tail-feathers on either side moulting'.

Capella gallinago (Linnaeus): Common Snipe. Body feathers were moulting but no moult of primaries observed in the individuals checked (4 February to 16 March).

A small flock of *Capella* sp. (15 to 20) was seen near Jamalpur in the shallow regions of a water-logged area. The majority were inactive (11 a.m.) and a few were feeding. In the act of collecting food materials from water the whole head up to the neck is dipped into the water.

Capella minima (Brünnich): Jack Snipe. Three birds were brought to me by *Mirshikars* on 17 February at Manjhaul. I failed to see this bird in the field.

Calidris minutus (Leisler): Little Stint. Common. Number increased considerably by March. Out of the nineteen individuals examined (15 to 17 March) 13 were moulting the outer primaries, the rest had completed moult. Body feathers of all the individuals were in moult. Moulting of primaries is of the *descending* type, i.e. from inner towards outer. Only those birds which had completed the primary moult showed any breeding plumage.

Calidris temminckii (Leisler): Temminck's Stint. Common in February and became very common during March. 15 were moulting outer primaries, with 3 completed in 18 individuals examined on 16 and 17 March. All showed moulting of body feathers. The primary moulting is of the *descending* type. Only those birds which had completed primary moult showed any signs of breeding plumage. I was told by *Mirshikars* that *C. minutus* and *C. temminckii* change their plumage colour (? attain breeding plumage) before they leave the area.

Philomachus pugnax (Linnaeus): Ruff and Reeve. Very common in all places visited. All were in non-breeding plumage (7 March). Enormous numbers were seen resting on the sandy islands in the Kosi (4 to 6 thousand) and in water-logged areas (2 to 3 thousand) near Jamalpur, between 10 a.m. and 4 p.m.

ROSTRATULIDAE

Rostratula benghalensis (Linnaeus): Painted Snipe. I did not see any in the field. *Mirshikars* supplied me with two males.

RECURVIROSTRIDAE

Himantopus himantopus (Linnaeus): Blackwinged Stilt. Common on mud-flats, shallow regions of *jheels* and *chaurs*. Three individuals handled on 17 March showed no signs of moulting. The wing length and weight of the birds are: ♂ wing 248 mm., wt. 192 gm.; ♀ wing 228 mm., wt. 158 gm.; ♀ wing 218 mm., wt. 160 gm.

Recurvirostra avosetta Linnaeus: Avocet. Two small flocks consisting of 32 and 38 individuals were seen resting on a sandy island

in the Kosi and in a low-lying water-logged area near Jamalpur on 29 February and 2 March respectively. Their species segregation in flight, alighting, and settling was striking.

Non-migrant members of the Charadriiformes noted were: *Hydrophasianus chirurgus* (Scopoli) (in twos and threes), *Metopidius indicus* (Latham) (flocks consisting of 20 to 30 birds; none of them had the long sickle-shaped tail-feathers), and *Vanellus indicus* (Boddaert) (in twos and threes) were common all over.

During the heat of the day waders were noted taking refuge on the sandy islands in the Kosi as well as in water-logged areas with thinly distributed emergent vegetation. Here they showed practically no feeding movements. In such instances they were in thickly packed flocks, the majority resting on one leg and a few on both, with the head on the back and the neck bent over the right shoulder. The flow from the feeding grounds to the resting area started from 8 a.m. and continued to 11.30 a.m. The return flight was from 3 p.m. onwards. When a resting flock was disturbed a kind of species segregation was observed in flight and on subsequent alighting. This was particularly so in *Recurvirostra avosetta*, *Philomachus pugnax*, *Pluvialis dominica*, and *Limosa limosa*.

In February when the days were rather cooler migratory waders were thinly represented. With the onset of the hot weather, by the end of February and the first week of March, there was a definite increase in the number of waders all over the area. It might be due either to fresh additions of incoming birds or just a collecting together of the birds already there as a preliminary step for their migration. It is significant that the increase in number coincided with the rise in the day temperature.

From information gathered mainly from shikaris and professional bird-catchers at different places, the following points were noted. The main wave of ducks and waders starts coming in by September, by November, when the low-lying areas are under water and the paddy crops are ripening, the peak inflow is attained. During this peak period which continues till the second week of January waders and ducks are found in enormous congregations all over the area. Then there is a sharp decline in numbers, particularly so in the case of waders. The second wave of waders (? the outward migration) starts with the onset of the hot weather, i.e. by the beginning of March. For the next 1½ months waders are found in good numbers but not so abundantly as they were during November to January. The majority of ducks leave the place by the beginning of March and waders by the middle of April.

ALAUDIDAE

Calandrella cinerea (Gmelin): Short-toed Lark. The first flocks were seen on 11 February. From the beginning of March the number of birds increased daily and by the second week this bird was common all over and abundant in recently ploughed fields. In certain ploughed fields they collected together during dusk for roosting in enormous numbers (? permanent roosting areas during their sojourn).

The bird is locally known as *phallak*. I was told that these birds completely disappear by the end of April and are not seen the rest of the year. I was also informed that at the time of their arrival they are thin and lean (?) and at departure are 'balls of fat'. The flesh is considered to be excellent.

A couple of hundred March individuals (18th to 22nd) showed no moulting of primaries, though in many the body feathers were in moult.

MOTACILLIDAE

The extensive alluvial plains of north Bihar provide ideal feeding ground for myriads of wagtails that visit the area during winter. Out of the five species of migrant forms that come to India, three were seen in considerable numbers:

Motacilla flava Linnaeus: Yellow Wagtail. Majority in their confusing winter (? juvenile) plumage till 18 March. A few of the subspecies *beema* and *thunbergi* were seen in breeding plumage.

Motacilla citreola Pallas: Yellowheaded Wagtail. The typical aquatic biotope wagtail. Generally met with in marshy areas.

Motacilla alba Linnaeus: White Wagtail. The majority had white ear-coverts (*dukhunensis*). I saw only five or six birds with black ear-coverts (*personata*).

None of the wagtails showed primary feather moulting, but in all the three species tail-feathers were in moult.

In winter wagtails appear to be commoner than any other bird. In the evening enormous numbers of wagtails swarmed around sugarcane fields for roosting. Five such populous roosts were located. These very beneficial and sprightly little birds were also caught in large numbers by *Mirshikars* for sale.

OTHER COMMON PASSERINE MIGRANTS

Hirundo rustica Linnaeus: Swallow. Ventral plumage was rather pure white in all individuals observed.

Lanius cristatus Linnaeus: Brown Shrike.

Acrocephalus dumetorum Blyth: Blyth's Reed Warbler.

Erithacus svecicus (Linnaeus): Bluethroat. All were the red-spotted form.

Saxicola torquata (Linnaeus): Stone Chat.

Phoenicurus ochruros (S.G. Gmelin): Black Redstart.

STATUS OF WILD LIFE

Every good area for birds had its quota of professional bird trappers. The general impression that I received is that birds and other wild life are mercilessly massacred during both the 'close' and 'open' seasons. Most people are ignorant of the game rules and no one appears interested in enforcing them. There are two types of professional bird-catchers, the *Mirshikar* operating in the whole area and the *Mallaha* operating only on large lakes like Kabar Tal and Koniya *jheel*.

Mirshikars

Mirshikars are Muslims. They are expert bird-catchers who can bag any bird; they hunt by day and by night, depending on conditions. Night trapping is done with the help of the pole net, a cotton net 9×6 ft. ($1\frac{1}{3}$ in. mesh size) loosely fastened on two cross

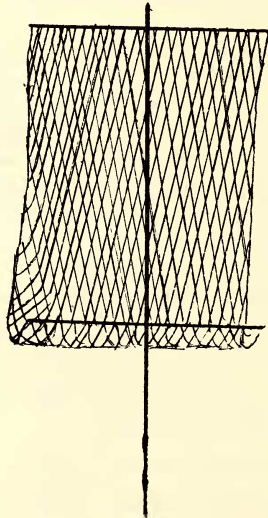


Fig. 1. Pole net

planks fixed on a main pole of 12 ft. as shown in the figure. The hunting party consists of two men. The trapper walks in front with

the pole net in one hand and a lighted bundle of dry grass in the other; the second man follows close behind beating a metal plate and carrying a basket for collection. The beating I was told is done to muffle the sound of walking. When the trapper sees a bird within 20 to 22 ft. he dashes the pole net over it—the men are such adepts that misses are rare. I saw *Anas clypeata*, *A. querquedula*, *A. crecca*, *Tringa glareola*, *Capella* sp., and *Pluvialis dominica* caught with this net. For catching waders and ducks they never go beyond knee-deep water. They do not hunt on windy nights or on moonlit nights, as the former affect the aim and the latter make the catcher visible to the bird.

'Dhubbi' type net, described by Sálím Ali (1928)¹ is also used.

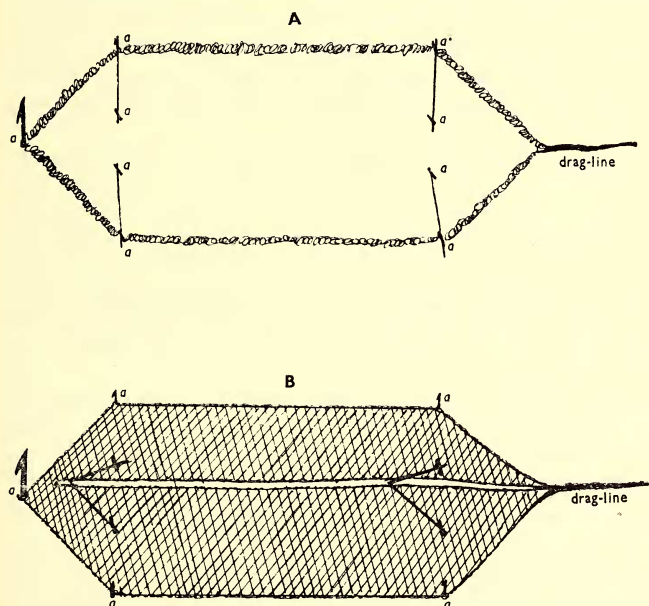


Fig. 2. "Dhubbi" net

A. 'Dhubbi' net as concealed *in situ*; B. Closed 'Dhubbi' net
 a, a: Stakes

The net 25×12 ft. is biconical when stretched on the ground. One side of the net is fixed on to the ground with stakes while the other

¹ SÁLIM A. ALI (1928): A Sind Lake. *J. Bombay nat. Hist. Soc.* 32 (3): 460-471.

is rolled and concealed on the ground. A drag-line of 2 to 3 hundred yards is attached to the free end of the net. When this is pulled with sufficient force the rolled up portions of the net unroll and the free sides of the net on either side will come together at the centre, thereby forming a trap as shown in the figure. This net is used for large-scale catching of birds at their favourite feeding and resting grounds and is mainly used for ducks, waders, and also for short-toed larks.

Bird lime splints attached to poles and nooses are used, but the number caught by this method is considerably less.

Mallahas

Mallahas eke out a bare livelihood by catching birds and fishes. They are Hindus. Their methods of catching and handling the birds are rather crude. They catch only water birds like coots, ducks, etc., and that too only on calm pitch-dark nights. Nets and nooses are the devices used by them.

A single-tier cotton net (mesh size 2 in.) 14 to 16 ft. long and 3 to 3½ ft. wide is tied 6 to 8 ft. above water-level on bamboos fixed in water. There might be 20 to 80 nets in a single line. One group of nets requires a minimum of three men and three punts. One punt takes its position at the centre of the line of nets, 15 to 20 ft. from the net on the side opposite to where the birds are settled. At the prow of this punt an earthen pot is fixed, its rim facing away from the boat. In this pot firewood is kept burning to attract birds at the time of hunting.

Just before the hunt starts the firewood is lit. Two punts on either side of the net move forward driving the birds towards the net. When the birds reach sufficiently close a terrific uproar is set up by the boatmen on either side. Frightened birds spring from the water and some are attracted into the net by the burning firewood. Ninety-nine per cent. of the *Mallahas'* catch is got in this way.

A pole net slightly longer than the one mentioned earlier is also used. The *Mallahas'* methods with this is different from that of the *Mirshikars*. For the operation four men and three punts are required. The catcher takes his seat in the central punt and holds the pole net upright, close behind the 'pot'. Firewood in the earthen pot is lit. Punts on either side keep a distance of about 30 ft. between them and take a position 8 to 12 ft. ahead of the central punt. All the three punts move slowly keeping their respective positions, towards the place where birds are settled. When the side punts reach sufficiently

close to the birds the men raise an uproar and the disturbed birds leave the water and some attracted by the light are caught in the net.

DESTRUCTION OF BIRDS

I spent more time at Kabar Tal than at any other place and can speak with some confidence of the distressing conditions there.

A reliable person, who is aware of the catches from Kabar over a number of years, informed me that the average daily catch of waterfowl from this lake alone comes to 4 to 5 hundred, shooting up to a thousand or more during the peak period from mid-November to the beginning of January. This would not be an exaggeration considering the strength of *Mallahas* at Kabar, a little over 900, plus about 30 *Mirshikars*. Commission agents purchase the whole catch on the spot and supply them in the adjoining towns, hence only a small fraction of the birds caught finds its way to Manjhaul bird-market. I quote below the number of birds I saw at the market as jotted down in my diary:

3 February	87	9 February	116
4 "	132	10 "	103
5 "	82	12 "	137
7 "	94	18 "	83
8 "	51		

On 13 and 15 February I had the opportunity of visiting *Mirshikars'* houses to have a look at their collection; the numbers noted down were 123 and 117 birds respectively. At Birpur in one day I came across six baskets of wagtails kept for sale, each containing 150 to 200 birds. I was told that the whole lot was the previous night's collection from a single roost! At Kabar I witnessed the ruthless persecution of waterfowl that goes on round the clock, during the day by shikaris with modern weapons and at night by *Mallahas* and *Mirshikars*. Snaring of birds is a full time profession in many parts of north Bihar. This in the absence of adequate sanctuaries where birds can take refuge poses a serious and challenging problem. Something needs to be done urgently and immediately, at least to restrict such wanton snaring and shooting of birds. I understand that the cruel practice of wholesale destruction of birds at lights is prohibited by law but it continues to flourish.

DESTRUCTION OF WATER-BIRD HABITATS

Jamal Ara in her note 'In search of the Pinkheaded Duck [*Rhodonessa caryophyllacea* (Latham)]' (*J. Bombay nat. Hist. Soc.*

57 : 415-16) gives a brief account of the water-bird habitat destruction in Purnea District caused by large scale reclamation for cultivation. In recent years many *chours*, *jheels*, and other low-lying areas which were the habitat of water-birds in north Bihar have been drained. This destruction is going on at an accelerated pace depriving water-birds of their natural habitat. The prime need of the hour is to preserve some selected areas as a resort for water-birds where they can shelter from the slaughter that is rampant everywhere. Kabar Tal is a desirable spot in this respect.

BIRD MIGRATION STUDIES

The central portion of north Bihar offers excellent possibilities for bird migration studies both by its location in the subcontinent as well from the abundance and variety of migrants. It is possible that migrants ringed in early winter may later be recovered in other parts of the country providing information on the dispersal of the birds within the country.

The 'daylight roosts' of waders and ducks afford possibilities of large scale netting from mid-November to mid-January. Wagtails and swallows roost in enormous numbers in the area throughout the winter. As far as the Short-toed Larks are concerned large-scale ringing is possible only in the months of March and April.

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